

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An apparatus for obtaining a cuff volumetric pulse wave, comprising:

a cuff adapted to be worn on a limb of a living subject so that a pressure pulsation is produced in the cuff;

~~_____ a pressure sensor which is connected to a cuff adapted to be worn on a limb of a living subject so that a pressure pulsation is produced in the cuff, and which detects, as an actual cuff volumetric pulse wave, a pressure oscillation transmitted thereto from the cuff;~~

an inverse transfer function memory which stores an inverse transfer function corresponding to a transfer function between pressure pulsation as input and pressure oscillation as output; and

~~a cuff volumetric pulse wave determining means for determining, using the inverse transfer function stored by the inverse transfer function memory, determining a no-delay cuff volumetric pulse wave having substantially no delay of transmission, transmission based on the actual cuff volumetric pulse wave detected by the pressure sensor, sensor and the inverse transfer function stored by the inverse transfer function memory.~~

2. (Original) An apparatus for analyzing a cuff volumetric pulse wave obtained from a living subject, comprising:

the cuff volumetric pulse wave obtaining apparatus according to claim 1; and

a pulse wave analyzing means for analyzing the no-delay cuff volumetric pulse wave obtained by the cuff volumetric pulse wave obtaining apparatus, and thereby determining at least one of a blood pressure, a pulse wave propagation velocity, an arteriosclerosis evaluation index, and an autonomic nerve evaluation value of the subject.

3. (Currently Amended) ~~An apparatus for use in a~~ A method of obtaining a cuff volumetric pulse wave, ~~the apparatus comprising:~~ with an apparatus including a cuff adapted to be worn on a limb of a living subject so that a pressure pulsation is produced in the cuff,

_____ a pressure sensor which is connected to ~~a cuff adapted to be worn on a limb of a living subject so that a pressure pulsation is produced in the cuff,~~ and which detects, as an actual cuff volumetric pulse wave, a pressure oscillation transmitted thereto from the ~~cuff,~~ cuff,

_____ an inverse transfer function memory which stores an inverse transfer function corresponding to a transfer function between pressure pulsation as input and pressure oscillation as ~~output,~~ output, and

_____ a cuff volumetric pulse wave determining means for ~~determining, using the inverse transfer function stored by the inverse transfer function memory,~~ determining a no-delay cuff volumetric pulse wave having substantially no delay of ~~transmission,~~ transmission based on the actual cuff volumetric pulse wave detected by the pressure ~~sensor,~~ sensor and the inverse transfer function stored by the inverse transfer function memory, the method comprising:

~~wherein the method includes~~ (a) a step of determining the inverse transfer function corresponding to the transfer function, and storing the determined inverse transfer function in the inverse transfer function ~~memory,~~ and memory; and

_____ (b) a step of determining, using the inverse transfer function stored by the inverse transfer function memory, the no-delay cuff volumetric pulse wave having substantially no delay of transmission, based on the actual cuff volumetric pulse wave detected by the pressure sensor.

4. (Currently Amended) ~~An apparatus for use in a~~ A method of obtaining a cuff volumetric pulse wave, ~~the apparatus comprising:~~ with an apparatus including a cuff adapted to be worn on a limb of a living subject so that a pressure pulsation is produced in the cuff,

_____ a pressure sensor which is connected to ~~a cuff adapted to be worn on a limb of a living subject so that a pressure pulsation is produced in the cuff,~~ and which detects, as an actual cuff volumetric pulse wave, a pressure oscillation transmitted thereto from the ~~cuff,~~ cuff,

_____ an inverse transfer function memory which stores an inverse transfer function corresponding to a transfer function between pressure pulsation as input and pressure oscillation as ~~output,~~ output,

_____ a cuff volumetric pulse wave determining means for ~~determining, using the inverse transfer function stored by the inverse transfer function memory,~~ determining a no-delay cuff volumetric pulse wave having substantially no delay of ~~transmission,~~ transmission based on the actual cuff volumetric pulse wave detected by the pressure ~~sensor, and~~ sensor and the inverse transfer function stored by the inverse transfer function memory, and

_____ a pulse wave analyzing means for analyzing the no-delay cuff volumetric pulse wave determined by the cuff volumetric pulse wave determining means, the method comprising:

~~wherein the method includes~~ (a) a step of determining the inverse transfer function corresponding to the transfer function, and storing the determined inverse transfer function in the inverse transfer function ~~memory,~~ memory;

_____ (b) a step of determining, using the inverse transfer function stored by the inverse transfer function memory, the no-delay cuff volumetric pulse wave having

substantially no delay of transmission, based on the actual cuff volumetric pulse wave detected by the pressure ~~sensor, sensor;~~ and

_____ (c) a step of analyzing the determined no-delay cuff volumetric pulse wave, and thereby determining at least one of a blood pressure, a pulse wave propagation velocity, an arteriosclerosis evaluation index, and an autonomic nerve evaluation value of the subject.

5. (Original) The apparatus according to claim 2, wherein the pulse wave analyzing means determines at least one of a maximum magnitude, a minimum magnitude, a rising point, a degree of sharpness %MAP, a maximum slope SLOPE of a rising portion, an area, an augmentation index AI, and a ratio of a maximum magnitude after change of posture of the subject to a maximum magnitude before the change of posture, of a heartbeat-synchronous pulse of the no-delay cuff volumetric pulse wave determined by the cuff volumetric pulse wave determining means.

6. (Currently Amended) An apparatus for obtaining a pressure pulse wave, comprising:

_____ a cuff adapted to be worn on a limb of a living subject so as to press an artery of the limb;

a pressure sensor which is connected to ~~a cuff adapted to be worn on a limb of a living subject so as to press an artery of the limb,~~ the cuff, and which detects, as a cuff volumetric pulse wave, a pressure oscillation transmitted thereto from the cuff;

an inverse transfer function memory which stores an inverse transfer function corresponding to a transfer function between intra-arterial pressure as input and pressure oscillation as output; and

a pressure pulse wave determining means for ~~determining, using the inverse transfer function stored by the inverse transfer function memory,~~ determining a pressure pulse wave produced in the artery, based on the cuff volumetric pulse wave detected by the pressure

~~sensor~~sensor and the inverse transfer function stored by the inverse transfer function memory.

7. (Original) An apparatus for analyzing a pressure pulse wave obtained from a living subject, comprising:

the pressure pulse wave obtaining apparatus according to claim 6; and

a pulse wave analyzing means for analyzing the pressure pulse wave produced in the artery, and obtained by the pressure pulse wave obtaining apparatus, and thereby determining at least one of a blood pressure, a pulse wave propagation velocity, an arteriosclerosis evaluation index, and an autonomic nerve evaluation value of the subject.

8. (Currently Amended) ~~An apparatus for use in a~~A method of obtaining a pressure pulse wave, the apparatus comprising: wave with an apparatus including a cuff adapted to be worn on a limb of a living subject so as to press an artery of the limb,

~~_____a pressure sensor which is connected to a cuff adapted to be worn on a limb of a living subject so as to press an artery of the limb, the cuff,~~ and which detects, as a cuff volumetric pulse wave, a pressure oscillation transmitted thereto from the ~~cuff~~cuff,

~~_____an inverse transfer function memory which stores an inverse transfer function corresponding to a transfer function between intra-artery pressure as input and pressure oscillation as output;~~output, and

~~_____a pressure pulse wave determining means for determining, using the inverse transfer function stored by the inverse transfer function memory,~~determining a pressure pulse wave produced in the artery, based on the cuff volumetric pulse wave detected by the pressure ~~sensor~~sensor and the inverse transfer function stored by the inverse transfer function memory, the method comprising:

~~wherein the method includes~~ (a) a step of determining the inverse transfer function corresponding to the transfer function, and storing the determined inverse transfer function in the inverse transfer function ~~memory, memory;~~ and

_____ (b) a step of determining, using the inverse transfer function stored by the inverse transfer function memory, the pressure pulse wave produced in the artery, based on the cuff volumetric pulse wave detected by the pressure sensor.

9. (Currently Amended) ~~An apparatus for use in a~~ A method of obtaining a pressure pulse wave, ~~the apparatus comprising:~~ wave with an apparatus including a cuff adapted to be worn on a limb of a living subject so as to press an artery of the limb,
 _____ a pressure sensor which is connected to ~~a cuff adapted to be worn on a limb of a living subject so as to press an artery of the limb,~~ the cuff, and which detects, as a cuff volumetric pulse wave, a pressure oscillation transmitted thereto from the ~~cuff,~~ cuff,
 _____ an inverse transfer function memory which stores an inverse transfer function corresponding to a transfer function between intra-arterial pressure as input and pressure oscillation as ~~output,~~ output,
 _____ a pressure pulse wave determining means for ~~determining, using the inverse transfer function stored by the inverse transfer function memory,~~ determining a pressure pulse wave produced in the artery, based on the cuff volumetric pulse wave detected by the pressure ~~sensor; and~~ sensor and the inverse transfer function stored by the inverse transfer function memory, and

_____ a pulse wave analyzing means for analyzing the pressure pulse wave determined by the pressure pulse wave determining means, the method comprising:

~~wherein the method includes~~ (a) a step of determining the inverse transfer function corresponding to the transfer function, and storing the determined inverse transfer function in the inverse transfer function ~~memory, memory;~~

_____ (b) a step of determining, using the inverse transfer function stored by the inverse transfer function memory, the pressure pulse wave produced in the artery, based on the cuff volumetric pulse wave detected by the pressure ~~sensor, sensor,~~ and

_____ (c) a step of analyzing the determined pressure pulse wave, and thereby determining at least one of a blood pressure, a pulse wave propagation velocity, an arteriosclerosis evaluation index, and an autonomic nerve evaluation value of the subject.

10. (Original) The apparatus according to claim 7, wherein the pulse wave analyzing means determines at least one of a maximum magnitude, a minimum magnitude, a rising point, a degree of sharpness %MAP, a maximum slope SLOPE of a rising portion, an area, an augmentation index AI, and a ratio of a maximum magnitude after change of posture of the subject to a maximum magnitude before the change of posture, of a heartbeat-synchronous pulse of the pressure pulse wave determined by the pressure pulse wave determining means.

11. (Currently Amended) The ~~apparatus-method~~ according to claim 4, ~~wherein~~ further comprising:

_____ determining with the pulse wave analyzing means ~~determines~~ at least one of a maximum magnitude, a minimum magnitude, a rising point, a degree of sharpness %MAP, a maximum slope SLOPE of a rising portion, an area, an augmentation index AI, and a ratio of a maximum magnitude after change of posture of the subject to a maximum magnitude before the change of posture, of a heartbeat-synchronous pulse of the no-delay cuff volumetric pulse wave determined by the cuff volumetric pulse wave determining means.

12. (Currently Amended) The ~~apparatus-method~~ according to claim 9, ~~wherein~~ further comprising:

_____ determining with the pulse wave analyzing means ~~determines~~ at least one of a maximum magnitude, a minimum magnitude, a rising point, a degree of sharpness %MAP, a

maximum slope SLOPE of a rising portion, an area, an augmentation index AI, and a ratio of a maximum magnitude after change of posture of the subject to a maximum magnitude before the change of posture, of a heartbeat-synchronous pulse of the pressure pulse wave determined by the pressure pulse wave determining means.

13-14. (Canceled)

15. (Currently Amended) ~~An apparatus for use in a~~A method of obtaining a cuff volumetric pulse wave, ~~the apparatus comprising:~~with an apparatus including a cuff adapted to be worn on a limb of a living subject so that a pressure pulsation is produced in the cuff,

~~_____a pressure sensor which is connected to a cuff adapted to be worn on a limb of a living subject so that a pressure pulsation is produced in the cuff, and which detects, as an actual cuff volumetric pulse wave, a pressure oscillation transmitted thereto from the~~cuff; cuff,

~~_____an inverse transfer function memory which stores an inverse transfer function corresponding to a transfer function between pressure pulsation as input and pressure oscillation as~~output; output, and

~~_____a cuff volumetric pulse wave determining device which determines, using the inverse transfer function stored by the inverse transfer function memory, determines a no-delay cuff volumetric pulse wave having substantially no delay of~~transmission; transmission based on the actual cuff volumetric pulse wave detected by the pressure sensor; sensor and the inverse transfer function stored by the inverse transfer function memory, the method comprising:

~~wherein the method includes~~ (a) a step of determining the inverse transfer function corresponding to the transfer function, and storing the determined inverse transfer function in the inverse transfer function ~~memory; memory;~~ and

_____ (b) a step of determining, using the inverse transfer function stored by the inverse transfer function memory, the no-delay cuff volumetric pulse wave having substantially no delay of transmission, based on the actual cuff volumetric pulse wave detected by the pressure sensor.

16. (Currently Amended) ~~An apparatus for use in a~~ A method of obtaining a cuff volumetric pulse wave, ~~the apparatus comprising: with an apparatus including a cuff adapted to be worn on a limb of a living subject so that a pressure pulsation is produced in the cuff,~~

_____ a pressure sensor which is connected to ~~a cuff adapted to be worn on a limb of a living subject so that a pressure pulsation is produced in the cuff,~~ and which detects, as an actual cuff volumetric pulse wave, a pressure oscillation transmitted thereto from the ~~cuff;~~ cuff,

_____ an inverse transfer function memory which stores an inverse transfer function corresponding to a transfer function between pressure pulsation as input and pressure oscillation as ~~output;~~ output,

_____ a cuff volumetric pulse wave determining device which ~~determines,~~ determines using the inverse transfer function stored by the inverse transfer function memory, a no-delay cuff volumetric pulse wave having substantially no delay of ~~transmission,~~ transmission based on the actual cuff volumetric pulse wave detected by the pressure ~~sensor;~~ and sensor and the inverse transfer function stored by the inverse transfer function memory, and

_____ a pulse wave analyzing device which analyzes the no-delay cuff volumetric pulse wave determined by the cuff volumetric pulse wave determining device, the method comprising:

~~wherein the method includes~~ (a) a step of determining the inverse transfer function corresponding to the transfer function, and storing the determined inverse transfer function in the inverse transfer function ~~memory, memory;~~

_____ (b) a step of determining, using the inverse transfer function stored by the inverse transfer function memory, the no-delay cuff volumetric pulse wave having substantially no delay of transmission, based on the actual cuff volumetric pulse wave detected by the pressure ~~sensor, sensor;~~ and

_____ (c) a step of analyzing the determined no-delay cuff volumetric pulse wave, and thereby determining at least one of a blood pressure, a pulse wave propagation velocity, an arteriosclerosis evaluation index, and an autonomic nerve evaluation value of the subject.

17-18. (Canceled)

19. (Currently Amended) ~~An apparatus for use in a~~ A method of obtaining a pressure pulse wave, the apparatus comprising: wave with an apparatus including a cuff adapted to be worn on a limb of a living subject so as to press an artery of the limb,

_____ ~~a pressure sensor which is connected to a cuff adapted to be worn on a limb of a living subject so as to press an artery of the limb,~~ the cuff, and which detects, as a cuff volumetric pulse wave, a pressure oscillation transmitted thereto from the ~~cuff, cuff,~~

_____ ~~an inverse transfer function memory which stores an inverse transfer function corresponding to a transfer function between intra-artery pressure as input and pressure oscillation as output;~~ output, and

_____ ~~a pressure pulse wave determining device which determines, using the inverse transfer function stored by the inverse transfer function memory,~~ determines a pressure pulse wave produced in the artery, based on the cuff volumetric pulse wave detected by the pressure ~~sensor, sensor and the inverse transfer function stored by the inverse transfer function~~ memory, the method comprising:

~~wherein the method includes~~ (a) a step of determining the inverse transfer function corresponding to the transfer function, and storing the determined inverse transfer function in the inverse transfer function ~~memory, memory;~~ and

_____ (b) a step of determining, using the inverse transfer function stored by the inverse transfer function memory, the pressure pulse wave produced in the artery, based on the cuff volumetric pulse wave detected by the pressure sensor.

20. (Currently Amended) ~~An apparatus for use in a~~ A method of obtaining a pressure pulse wave, ~~the apparatus comprising: wave with an apparatus comprising a cuff adapted to be worn on a limb of a living subject so as to press an artery of the limb,~~
 _____ a pressure sensor which is connected to ~~a cuff adapted to be worn on a limb of a living subject so as to press an artery of the limb, the cuff,~~ and which detects, as a cuff volumetric pulse wave, a pressure oscillation transmitted thereto from the ~~cuff; cuff,~~
 _____ an inverse transfer function memory which stores an inverse transfer function corresponding to a transfer function between intra-arterial pressure as input and pressure oscillation as ~~output; output,~~
 _____ a pressure pulse wave determining device which ~~determines, using~~ determines the inverse transfer function stored by the inverse transfer function memory, a pressure pulse wave produced in the artery, based on the cuff volumetric pulse wave detected by the pressure ~~sensor; and~~ sensor and the inverse transfer function stored by the inverse transfer function memory, and

_____ a pulse wave analyzing device which analyzes the pressure pulse wave determined by the pressure pulse wave determining device, the method comprising:

~~wherein the method includes~~ (a) a step of determining the inverse transfer function corresponding to the transfer function, and storing the determined inverse transfer function in the inverse transfer function ~~memory, memory;~~

_____ (b) a step of determining, using the inverse transfer function stored by the inverse transfer function memory, the pressure pulse wave produced in the artery, based on the cuff volumetric pulse wave detected by the pressure ~~sensor~~, sensor, and

_____ (c) a step of analyzing the determined pressure pulse wave, and thereby determining at least one of a blood pressure, a pulse wave propagation velocity, an arteriosclerosis evaluation index, and an autonomic nerve evaluation value of the subject.